IN THE CLAIMS

Please amend claims 1, 5, 8, 13, and 15 as follows.

1. (Thrice Amended) A method of forming diamond crystals or a diamond film comprising disposing a substrate in a reaction chamber;

introducing, in the absence of a gas stream, a liquid precursor substantially free of water and methanol and at least one carbon and oxygen containing compound having a carbon to oxygen ratio greater than one into an inlet of the reaction chamber;

vaporizing the liquid precursor; and

subjecting the vaporized precursor, in the absence of a carrier gas, to a plasma under conditions effective to disassociate the vaporized precursor and promote diamond growth on the substrate.

5. (Twice Amended) The method according to claim 1, wherein the carbon and oxygen containing compound is selected from ethanol, isopropanol, acetone, and combinations thereof.

8. (Twice Amended) The method according to claim 1, wherein the carbon and oxygen containing compound includes a dopant element or moiety.

13. (Thrice Amended) A plasma enhanced chemical vapor deposition of diamond crystals and diamond films on surfaces of a substrate, comprising:

providing an apparatus including an inlet, a disassociation zone, a deposition zone and an outlet;

introducing, in the absence of a gas stream, a liquid precursor substantially free of water and comprising methanol and at least one carbon and oxygen containing compound having a carbon to oxygen ratio greater than one, into the inlet under conditions effective to vaporize the liquid precursor, flow the vaporized precursor through the disassociation zone, and through the outlet;

disassociating and reacting the vaporized precursor as vaporized precursor flows or diffuses through the disassociation zone to produce OH, H, O, and carbon containing radicals; and

producing diamond crystals or diamond films on the surface of the substrate in the absence of a carrier gas.

15. (Once amended) The process according to claim 13, wherein the introducing step comprises:

introducing the liquid precursor with methanol in an amount between about 0.5 wt. % and 99.5 wt. %.

Please add the following new claims.

19. (Newly added) The method of claim 1, wherein the carrier gas is hydrogen (H_2).

20. (Newly added) A method of forming diamond crystals or a diamond film comprising:

disposing a substrate in a reaction chamber;

introducing a liquid precursor containing methanol and at least one carbon and oxygen containing compound having a carbon to oxygen ratio greater than one into an inlet of the reaction chamber;

vaporizing the liquid precursor;

subjecting the vaporized precursor to a plasma under conditions effective to disassociate the vaporized precursor; and

promoting diamond growth on the substrate at a rate between about 1 micrometer and 2.7 micrometers per hour.

21. (Newly added) A method of forming diamond crystals or a diamond film comprising:

disposing a substrate in a reaction chamber;

introducing a liquid precursor containing methanol and at least one carbon and oxygen containing compound having a carbon to oxygen ratio greater than one into an inlet of the reaction chamber;

vaporizing the liquid precursor;

subjecting the vaporized precursor to a plasma under conditions effective to disassociate the vaporized precursor; and

promoting diamond growth on the substrate, in the absence of a carrier gas.

22. (Newly added) The method of claim 21, wherein promoting diamond growth includes:

promoting diamond growth, in the absence of a carrier gas, at a rate between about 1 micrometer and 2.7 micrometers per hour.

23. (Newly added) The method of claim 22, wherein the carrier gas is hydrogen (H_2).

24. (Newly added) The method of claim 21, wherein the liquid precursor consists essentially of methanol and at least one carbon and oxygen containing compound having a carbon to oxygen ratio greater than one.

25. (Newly added) A plasma enhanced chemical vapor deposition of diamond crystals and diamond films on surfaces of a substrate, comprising:

providing an apparatus including an inlet, a disassociation zone, a deposition zone and an outlet;

introducing a liquid precursor comprising methanol and at least one carbon and oxygen containing compound having a carbon to oxygen ratio greater than one, into the inlet under conditions effective to vaporize the liquid precursor, flow the vaporized precursor through the disassociation zone, and through the outlet;

disassociating and reacting the vaporized precursor as vaporized precursor flows or diffuses through the disassociation zone to produce OH, H, O, and carbon containing radicals; and

producing diamond crystals or diamond films on the surface of the substrate in the absence of a carrier gas.

26. (Newly added) The method of claim 25, wherein promoting diamond growth includes:

promoting diamond growth, in the absence of a carrier gas, at a rate between about 1 micrometer and 2.7 micrometers per hour.

27. (Newly added) The method of claim 26, wherein the carrier gas is hydrogen (H_2).

28. (Newly added) The method of claim 25, wherein the liquid precursor consists essentially of methanol and at least one carbon and oxygen containing compound having a carbon to oxygen ratio greater than one.